

WHAT IS CLAIMED IS:

1. A light emitting device comprising:

a substrate having an insulating surface;

an insulating film formed over the substrate; and

a light emitting element comprising a transparent electrode, an organic compound layer formed on the transparent electrode and a cathode formed on the organic compound layer, formed over the insulating film,

wherein a hole is formed in the insulating film, and

wherein a light reflector is placed so as to cover the hole.

2. A light emitting device comprising:

a substrate having an insulating surface;

at least one transistor formed over the substrate;

an insulating film formed in contact with the transistor; and

a light emitting element comprising a transparent electrode, an organic compound layer formed on the transparent electrode and a cathode formed on the organic compound layer, formed in contact with the insulating film,

wherein a hole is formed in the insulating film, and

wherein a light reflector is placed so as to cover the hole.

3. A light emitting device comprising:

a substrate having an insulating surface;

at least one transistor formed over the substrate;

an insulating film formed in contact with the transistor; and

a light emitting element comprising a transparent electrode, an organic compound layer formed on the transparent electrode and a cathode formed on the organic compound layer, formed in contact with the insulating film,

5            wherein a hole is formed in the insulating film, and  
             wherein the cathode is placed so as to cover the hole.

4. A light emitting device comprising:

a substrate having an insulating surface;

at least one transistor formed over the substrate;

a first insulating film formed in contact with the transistor;

a second insulating film formed in contact with the first insulating film; and

a light emitting element comprising a transparent electrode, an organic compound layer formed on the transparent electrode and a cathode formed on the organic compound layer, formed in contact with the insulating film,

wherein a hole is formed in the first and second insulating films, and

wherein a light reflector is placed so as to cover the hole.

5. A light emitting device comprising:

a substrate having an insulating surface;

at least one transistor formed over the substrate;

a first insulating film formed in contact with the transistor;

a second insulating film formed in contact with the first insulating film; and

a light emitting element comprising a transparent electrode, an organic compound

layer formed on the transparent electrode and a cathode formed on the organic compound layer, formed in contact with the insulating film,

wherein a hole is formed in the first and second insulating films, and

wherein the cathode is placed so as to cover the hole.

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6. A light emitting device comprising:

a substrate having an insulating surface;

at least one transistor formed over the substrate;

a first insulating film formed in contact with the transistor;

a second insulating film formed in contact with the first insulating film;

a third insulating film formed in contact with the second insulating film; and

a light emitting element comprising a transparent electrode, an organic compound

layer formed on the transparent electrode and a cathode formed on the organic compound layer, formed in contact with the insulating film,

wherein a hole is formed in the first, second and third insulating films, and

wherein a light reflector is placed so as to cover the hole.

7. A light emitting device comprising:

a substrate having an insulating surface;

at least one transistor formed over the substrate;

a first insulating film formed in contact with the transistor;

a second insulating film formed in contact with the first insulating film;

a third insulating film formed in contact with the second insulating film; and

a light emitting element comprising a transparent electrode, an organic compound

layer formed on the transparent electrode and a cathode formed on the organic compound layer, formed in contact with the insulating film,

wherein a hole is formed in the first to third insulating films, and

wherein the cathode is placed so as to cover the hole.

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8. A light emitting device according to claim 1, wherein the light reflector is a metal film.

9. A light emitting device according to claim 2, wherein the light reflector is a metal film.

10. A light emitting device according to claim 4, wherein the light reflector is a metal film.

11. A light emitting device according to claim 6, wherein the light reflector is a metal film.

12. A light emitting device according to claim 1, wherein the taper angle ( $\theta_b$ ) of the light reflector and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $\theta_b < (45^\circ + \theta_f/2)$ .

13. A light emitting device according to claim 2, wherein the taper angle ( $\theta_b$ ) of the light reflector and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $\theta_b < (45^\circ + \theta_f/2)$ .

14. A light emitting device according to claim 4, wherein the taper angle ( $\theta_b$ ) of the light reflector and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $\theta_b < (45^\circ + \theta_f/2)$ .

15. A light emitting device according to claim 6, wherein the taper angle ( $\theta_b$ ) of the light reflector and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $\theta_b < (45^\circ + \theta_f/2)$ .

16. A light emitting device according to claim 1, wherein the maximum distance (L) from the organic compound layer to the light reflector, the maximum thickness (D) from the organic compound layer to the light reflector, and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $L/D < \tan\theta_f$ .

17. A light emitting device according to claim 2, wherein the maximum distance (L) from the organic compound layer to the light reflector, the maximum thickness (D) from the organic compound layer to the light reflector, and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $L/D < \tan\theta_f$ .

18. A light emitting device according to claim 4, wherein the maximum distance (L) from the organic compound layer to the light reflector, the maximum thickness (D) from the organic compound layer to the light reflector, and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $L/D < \tan\theta_f$ .

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19. A light emitting device according to claim 6, wherein the maximum distance (L) from the organic compound layer to the light reflector, the maximum thickness (D) from the organic compound layer to the light reflector, and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $L/D < \tan\theta_f$ .

20. A light emitting device according to claim 3, wherein the taper angle ( $\theta_b$ ) of the cathode formed so as to cover the hole and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $\theta_b < (45^\circ + \theta_f/2)$ .

21. A light emitting device according to claim 5, wherein the taper angle ( $\theta_b$ ) of the cathode formed so as to cover the hole and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $\theta_b < (45^\circ + \theta_f/2)$ .

22. A light emitting device according to claim 7, wherein the taper angle ( $\theta_b$ ) of the cathode formed so as to cover the hole and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $\theta_b < (45^\circ + \theta_f/2)$ .

23. A light emitting device according to claim 3, wherein the maximum distance (L) from the organic compound layer to the cathode formed so as to cover the hole, the maximum thickness (D) from the organic compound layer to the cathode, and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $L/D < \tan\theta_f$ .

24. A light emitting device according to claim 5, wherein the maximum distance (L) from the organic compound layer to the cathode formed so as to cover the hole, the

maximum thickness (D) from the organic compound layer to the cathode, and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $L/D < \tan\theta_f$ .

25. A light emitting device according to claim 7, wherein the maximum distance  
5 (L) from the organic compound layer to the cathode formed so as to cover the hole, the maximum thickness (D) from the organic compound layer to the cathode, and the critical angle ( $\theta_f$ ) at the interface between the light emitting device and the air satisfy  $L/D < \tan\theta_f$ .

26. A light emitting device according to claim 1, wherein the hole is placed so as not to overlap the light emitting element.

27. A light emitting device according to claim 2, wherein the hole is placed so as not to overlap the light emitting element.

28. A light emitting device according to claim 3, wherein the hole is placed so as not to overlap the light emitting element.

29. A light emitting device according to claim 4, wherein the hole is placed so as not to overlap the light emitting element.

30. A light emitting device according to claim 5, wherein the hole is placed so as not to overlap the light emitting element.

31. A light emitting device according to claim 6, wherein the hole is placed so as

not to overlap the light emitting element.

32. A light emitting device according to claim 7, wherein the hole is placed so as not to overlap the light emitting element.

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33. A light emitting device according to claim 1,  
wherein first and second wiring lines are provided on the substrate, and  
wherein the hole is placed in a region surrounded by the first and second wiring lines.

34. A light emitting device according to claim 2,  
wherein first and second wiring lines are provided on the substrate, and  
wherein the hole is placed in a region surrounded by the first and second wiring lines.

35. A light emitting device according to claim 3,  
wherein first and second wiring lines are provided on the substrate, and  
wherein the hole is placed in a region surrounded by the first and second wiring lines.

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36. A light emitting device according to claim 4,  
wherein first and second wiring lines are provided on the substrate, and  
wherein the hole is placed in a region surrounded by the first and second wiring lines.



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37. A light emitting device according to claim 5,  
wherein first and second wiring lines are provided on the substrate, and  
wherein the hole is placed in a region surrounded by the first and second wiring  
lines.

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38. A light emitting device according to claim 6,  
wherein first and second wiring lines are provided on the substrate, and  
wherein the hole is placed in a region surrounded by the first and second wiring  
lines.

39. A light emitting device according to claim 7,  
wherein first and second wiring lines are provided on the substrate, and  
wherein the hole is placed in a region surrounded by the first and second wiring  
lines.

40. A light emitting device according to claim 33, wherein each of the first and  
second wiring lines is one selected from the group consisting of a source line, a gate line, a  
power supply line, a capacitance line, and a reset line.

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41. A light emitting device according to claim 34, wherein each of the first and  
second wiring lines is one selected from the group consisting of a source line, a gate line, a  
power supply line, a capacitance line, and a reset line.

42. A light emitting device according to claim 35, wherein each of the first and

second wiring lines is one selected from the group consisting of a source line, a gate line, a power supply line, a capacitance line, and a reset line.

43. A light emitting device according to claim 36, wherein each of the first and second wiring lines is one selected from the group consisting of a source line, a gate line, a power supply line, a capacitance line, and a reset line.

44. A light emitting device according to claim 37, wherein each of the first and second wiring lines is one selected from the group consisting of a source line, a gate line, a power supply line, a capacitance line, and a reset line.

45. A light emitting device according to claim 38, wherein each of the first and second wiring lines is one selected from the group consisting of a source line, a gate line, a power supply line, a capacitance line, and a reset line.

46. A light emitting device according to claim 39, wherein each of the first and second wiring lines is one selected from the group consisting of a source line, a gate line, a power supply line, a capacitance line, and a reset line.

47. A light emitting device according to claim 4, wherein the hole formed in the first insulating film and the hole formed in the second insulating film overlap each other.

48. A light emitting device according to claim 5, wherein the hole formed in the first insulating film and the hole formed in the second insulating film overlap each other.

49. A light emitting device according to claim 6, wherein the hole formed in the first insulating film, the hole formed in the second insulating film, and the hole formed in the third insulating film overlap one another.

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50. A light emitting device according to claim 7, wherein the hole formed in the first insulating film, the hole formed in the second insulating film, and the hole formed in the third insulating film overlap one another.

51. A light emitting device according to claim 1, wherein an electronic equipment comprising the light emitting device is selected from the group of a light emitting display device, a digital still camera, a lap top computer, a mobile computer, a DVD player, goggle type display, a video camera and a mobile phone.

52. A light emitting device according to claim 2, wherein an electronic equipment comprising the light emitting device is selected from the group of a light emitting display device, a digital still camera, a lap top computer, a mobile computer, a DVD player, goggle type display, a video camera and a mobile phone.

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53. A light emitting device according to claim 3, wherein an electronic equipment comprising the light emitting device is selected from the group of a light emitting display device, a digital still camera, a lap top computer, a mobile computer, a DVD player, goggle type display, a video camera and a mobile phone.

54. A light emitting device according to claim 4, wherein an electronic equipment comprising the light emitting device is selected from the group of a light emitting display device, a digital still camera, a lap top computer, a mobile computer, a DVD player, goggle type display, a video camera and a mobile phone.

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55. A light emitting device according to claim 5, wherein an electronic equipment comprising the light emitting device is selected from the group of a light emitting display device, a digital still camera, a lap top computer, a mobile computer, a DVD player, goggle type display, a video camera and a mobile phone.

56. A light emitting device according to claim 6, wherein an electronic equipment comprising the light emitting device is selected from the group of a light emitting display device, a digital still camera, a lap top computer, a mobile computer, a DVD player, goggle type display, a video camera and a mobile phone.

57. A light emitting device according to claim 7, wherein an electronic equipment comprising the light emitting device is selected from the group of a light emitting display device, a digital still camera, a lap top computer, a mobile computer, a DVD player, goggle type display, a video camera and a mobile phone.

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